IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1   1. (Currently Amended) A spatial light modulator, comprising:

2   memory elements configured to store data therein and shift data therebetween; and

3   light modulation elements respectively in communication with the memory elements,

4   wherein each of the light modulation elements is alterable in response to [the] data stored in

5   the respectively ones-of-the corresponding memory element[s].

1   2. (Original)   The spatial light modulator according to claim 1, wherein said memory

2   elements are arranged in an array having rows and columns.

1   3. (Original)   The spatial light modulator according to claim 2, wherein said memory

2   elements are configured to shift the data bi-directionally between rows.

1   4. (Original)   The spatial light modulator according to claim 2, wherein said memory

2   elements are configured to shift the data bi-directionally between columns.

1   5. (Original)   The spatial light modulator according to claim 2, wherein said memory

2   elements are configured to shift the data bi-directionally between at least one of non-adjacent

3   rows and non-adjacent columns.

1   6. (Original)   The spatial light modulator according to claim 1, wherein said memory

2   elements are arranged in a nonorthogonal pattern.

1   7. (Original)   The spatial light modulator according to claim 1, wherein said memory

2   elements are static memory elements.

1   8. (Original)   The spatial light modulator according to claim 7, wherein each of the

2   memory elements includes a feedback element.

1   9. (Original)   The spatial light modulator according to claim 8, wherein the feedback

2   element is a weak feedback element.

1   10. (Original) The spatial light modulator according to claim 1, further comprising

2   access control elements connected to said respective memory elements.

1   11. (Original) The spatial light modulator according to claim 10, wherein said access

2   control elements include a forward access control element operable to control the state of said

3   respective memory element during a forward shift operation and a reverse access control

4   element operable to control the state of said respective memory element during a reverse shift

5   operation.

1   12. (Original) The spatial light modulator according to claim 1, wherein each of said

2   memory elements further includes an output node electrically coupled to an electrode of said

3   respective light modulation element and to an input node of an additional one of said memory

4   elements.

1   13. (Original) The spatial light modulator according to claim 12, wherein said

2   memory elements are interconnected in a shift register configuration.

1   14. (Original) The spatial light modulator according to claim 13, wherein said

2   memory elements each include a master-slave flip-flop.

1   15. (Original) The spatial light modulator according to claim 13, further comprising:

2   a timing circuit in communication with each of said memory elements to shift the data

3   between said memory elements.

1   16. (Original) The spatial light modulator according to claim 15, wherein said timing

2   circuit comprises a ripple clock.

1   17. (Original) The spatial light modulator according to claim 15, wherein said light

2   modulation elements comprise liquid crystal material.

1   18. (Original) The spatial light modulator according to claim 17, wherein said light

2   modulation elements further comprise:

3   a common electrode configured to receive a common electrode signal for said light

4   modulation elements; and

5   a respective pixel electrode configured to receive the data stored in said respective

6   memory elements.

1   19. (Original) The spatial light modulator according to claim 18, wherein said timing

2   circuit is operable to shift inverted data from a first one to a second one of the memory

3   elements and to switch the common electrode signal to alter the light modulation element

4   associated with the second one of the memory elements as a function of the inverted data.

1   20. (Original) The spatial light modulator according to claim 1, wherein said light

2   modulation elements comprise micromirrors.

1   21. (Original) The spatial light modulator according to claim 1, wherein said memory

2   elements are arranged in blocks, a first one of said blocks configured to receive data from an

3   external input and the others of said blocks configured to receive data from other ones of said

4   memory elements.

1 22. (Original) A method for performing photolithography, said method comprising:

2 loading data representing an image into memory elements in communication with

3 respective light modulation elements;

4 altering ones of the light modulation elements in response to the data loaded thereunto

5 to transfer the image onto a substrate;

6 shifting the data between the memory elements;

7 altering ones of the light modulation elements in response to the data shifted thereunto

8 to transfer the image onto the substrate.

1 23. (Original) The method according to claim 22, wherein each said altering further

2 comprises:

3 applying a voltage in response to the data to the change optical characteristics of the

4 light modulation elements.

1 24. (Original) The method according to claim 22, wherein said shifting further

2 comprises:

3 utilizing a ripple clock to control the timing of said shifting.

1 25. (Original) The method according to claim 22, further comprising:

2 moving at least one of the substrate and the light modulation elements relative to the

3 other.

1   26. (Original) The method according to claim 25, wherein said altering in response to

2   the shifted data is performed after said moving.